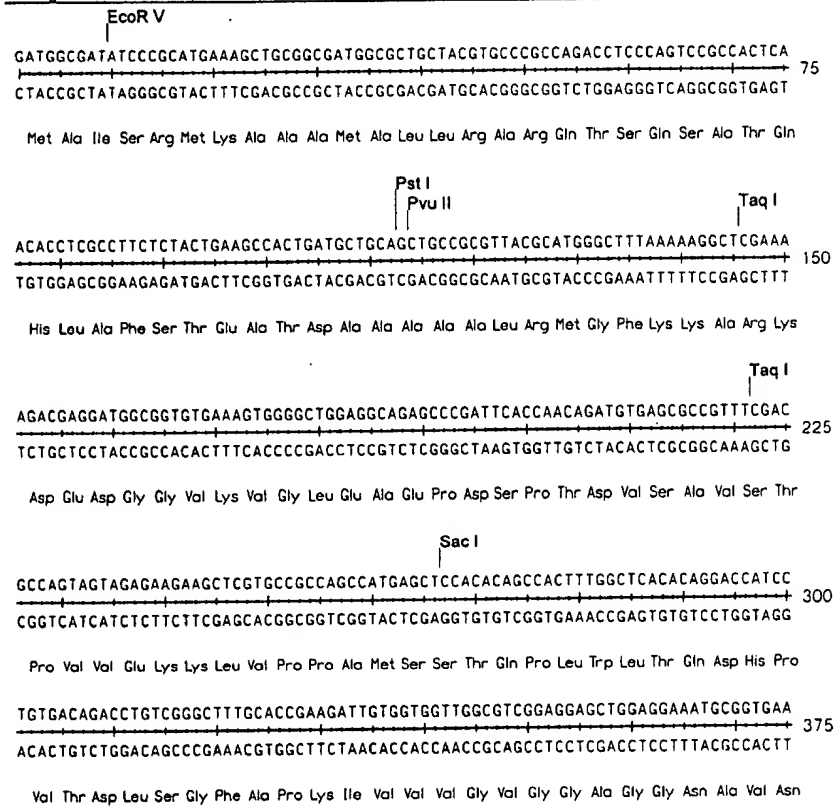
FtsZ-mt2 consensus2 Map.MPD (1 > 1423) Site and Sequence
Enzymes : 50 of 502 enzymes (Filtered)
Settings : Circular, Certain Sites Only, Standard Genetic Code



FtsZ-mt2 consensus2 Map.MPD (1 > 1423) Site and Sequence

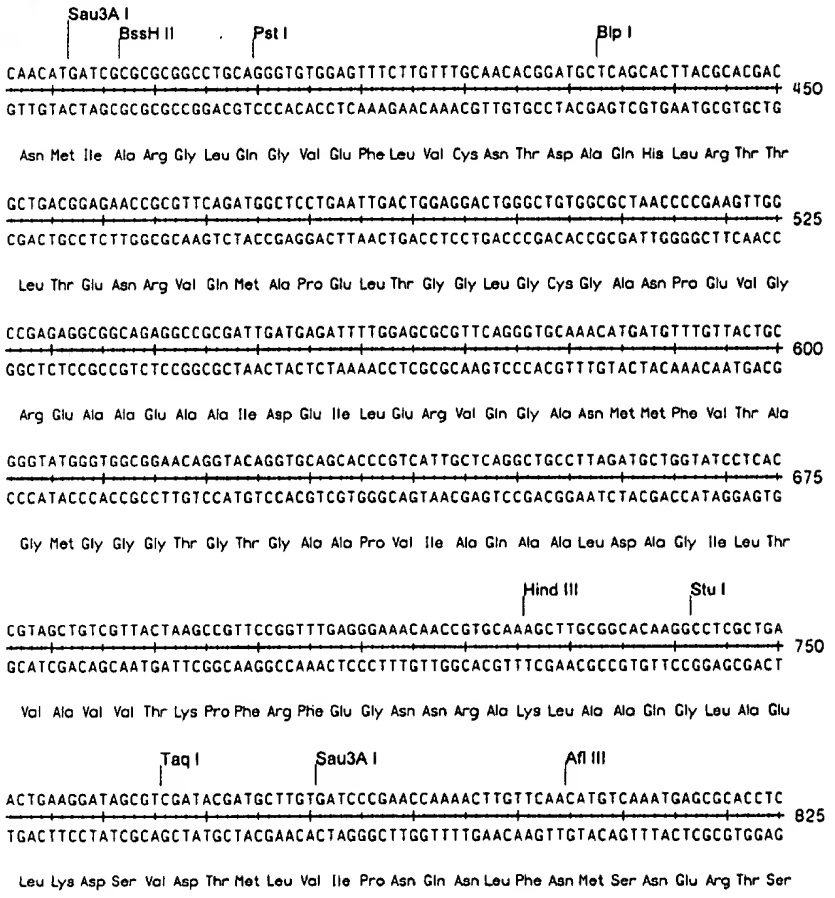


FIG. 1

FtsZ-mt2 consensus2 Map.MPD (1 > 1423) Site and Sequence

```
GTTGATGGACGCATTCAGAATGGCGGACAATGTGCTTCTGGACGGTGTCAAGAACATTTCGGATTTGATGGTGAT
-------------------------------------------------------------------------> 900
CAACTACCTGCGTAAGTCTTACCGCCTGTTACACGAAGACCTGCCACAGTTCTTGTAAAGCCTAAACTACCACTA

 Leu Met Asp Ala Phe Arg Met Ala Asp Asn Val Leu Leu Asp Gly Val Lys Asn Ile Ser Asp Leu Met Val Met

GCCTGGGCTCATTAACCTTGACTTTGCGGATGTTCAATCGGTCATGCAAAATATGGGAAACGCTATGATGGGAAG
-------------------------------------------------------------------------> 975
CGGACCCGAGTAATTGGAACTGAAACGCCTACAAGTTAGCCAGTACGTTTTATACCCTTTGCGATACTACCCTTC

 Pro Gly Leu Ile Asn Leu Asp Phe Ala Asp Val Gln Ser Val Met Gln Asn Met Gly Asn Ala Met Met Gly Ser

                                                  Nsi I
                                                  |
TGGAGAGGCCGATGGAGAGAATCGGGCTCTGCGTGCTGCTGAAGATGCATTGGCGAACCCTCTTCTGGGTGATAT
-------------------------------------------------------------------------> 1050
ACCTCTCCGGCTACCTCTCTTAGCCCGAGACGCACGACGACTTCTACGTAACCGCTTGGGAGAAGACCCACTATA

 Gly Glu Ala Asp Gly Glu Asn Arg Ala Leu Arg Ala Ala Glu Asp Ala Leu Ala Asn Pro Leu Leu Gly Asp Ile

 Taq I                Sau3A I
 |                    |
TTCGATTAAGGACGCCAAGGGCATGATCGTTAATATCACGGGAGGCTCCGACCTGACGCTATTTGAAGTTGATGA
-------------------------------------------------------------------------> 1125
AAGCTAATTCCTGCGGTTCCCGTACTAGCAATTATAGTGCCCTCCGAGGCTGGACTGCGATAAACTTCAACTACT

 Ser Ile Lys Asp Ala Lys Gly Met Ile Val Asn Ile Thr Gly Gly Ser Asp Leu Thr Leu Phe Glu Val Asp Glu

    Blp I                    Sau3A I                         Taq I   Taq I
    |                        |                               |       |
GGCTGCTGAGCGTGTGACGCGGGAACTTGATGATCCACACGCCAACATCATCTTCGGTTCGACCTTCGACGACTC
-------------------------------------------------------------------------> 1200
CCGACGACTCGCACACTGCGCCCTTGAACTACTAGGTGTGCGGTTGTAGTAGAAGCCAAGCTGGAAGCTGCTGAG

 Ala Ala Glu Arg Val Thr Arg Glu Leu Asp Asp Pro His Ala Asn Ile Ile Phe Gly Ser Thr Phe Asp Asp Ser

                  Afl III
                  Mlu I
                  |
GCTGGGCGGCAAGCTACGCGTCTCCGTGGTTGCCACTGGTATTGCCGACCCCGACAAGTTATAGAAGCCGTGATG
-------------------------------------------------------------------------> 1275
CGACCCGCCGTTCGATGCGCAGAGGCACCAACGGTGACCATAACGGCTGGGGCTGTTCAATATCTTCGGCACTAC

 Leu Gly Gly Lys Leu Arg Val Ser Val Val Ala Thr Gly Ile Ala Asp Pro Asp Lys Leu *
```


FtsZ-mt2 consensus2 Map.MPD (1 > 1423) Site and Sequence

```
TTGGCCAGTATCAAAGCGTAAGCAGGGGAATGACACCTAATGACGTGATTGCTCAAGAAATCTCTACAATTTGAA
-------------------------------------------------------------------------> 1350
AACCGGTCATAGTTTCGCATTCGTCCCCTTACTGTGGATTACTGCACTAACGAGTTCTTTAGAGATGTTAAACTT

   Cla I
   Taq I                 Sau3A I
   |                     |
GTGGCATCGATGTCTCCACGCACCCGCGCGTGCTGATCGGATTGGTATTATACGGACTGCTTCATACTTAGTT
-----------------------------------------------------------------------> 1423
CACCGTAGCTACAGAGGTGCGTGGGCGCGCACGACTAGCCTAACCATAATATGCCTGACGAAGTATGAATCAA
```

FIG. 1

	Source Organism (organelle)	GenBank Accession No.
SEQ ID NO: 11	Agrobacterium tumefaciens	O30992
SEQ ID NO: 12	Sinorhizobium meliloti	P30327
SEQ ID NO: 13	Bartonella clarridgeiae	AAD31718
SEQ ID NO: 14	Rickettsia prowazekii	Q9ZCQ3
SEQ ID NO: 15	Caulobacter crescentus	P52976
SEQ ID NO: 16	Cyanidioschyzon merolae (mt)	BAA85115
SEQ ID NO: 4	Phytophthora infestans -mt2	this invention
SEQ ID NO: 17	Mallomonas splendens (mt)	AAF35432
SEQ ID NO: 2	Phytophthora infestans -mt1	this invention
SEQ ID NO: 18	Gentiana lutea (cp)	T51088
SEQ ID NO: 19	Nicotiana tabacum (cp, 2-1)	T51087
SEQ ID NO: 20	Arabidopsis thaliana (cp,2-1)	T49028
SEQ ID NO: 21	Physcomitrella patens (cp, 1)	T51089
SEQ ID NO: 22	Physcomitrella patens (cp, 2)	T51090
SEQ ID NO: 23	Guillardia theta (cp)	CAB40398
SEQ ID NO: 24	Mallomonas splendens (cp)	AAF35433
SEQ ID NO: 25	Anabaena PCC7120	CAA83241
SEQ ID NO: 26	Synechocystis PCC6803	P73456
SEQ ID NO: 27	Arabidopsis thaliana (cp,1-1)	Q42545
SEQ ID NO: 28	Pisum sativum (cp)	T06774
SEQ ID NO: 29	Nicotiana tabacum (cp,1-3)	CAB89287
SEQ ID NO: 30	Nicotiana tabacum (cp,1)	CAB41987
SEQ ID NO: 31	Nicotiana tabacum (cp,1-1)	CAB89286
SEQ ID NO: 32	Nicotiana tabacum (cp,2)	AAF23770

	1	50
Bacterial FtsZ		
SEQ ID NO: 11	PRITVFGVGGGGGNAVNNMITVGLQGVDFVVANTDAQALTMT..KADRVIQLGVNVTEGL	
SEQ ID NO: 12	PRITVFGVGGGGGNAVNNMITAGLQGVDFVVANTDAQALTMT..KAERIIQMGVAVTEGL	
SEQ ID NO: 13	PRITVFGVGGGGGNAVNNMINAGLQGVDFVVANTDAQALAMS..KAERVIQLGAAVTEGL	
SEQ ID NO: 14	PTITVFGVGGAGSNAVNNMIHANLQGANFVVANTDAQSLEHS..LCINKIQLGVSTTRGL	
SEQ ID NO: 15	PRIVVFGVGGAGGNAVNNMIEAGLEGVEFVVANTDAQQLQFA..KTDRRIQLGVQITQGL	
Mitochondrial FtsZ		
SEQ ID NO: 16	PRIMVVGVGGAGGNAVNNMIASSLPGVEFLVANTDAQALKMS..LCPNRIQLGASLTEGL	
SEQ ID NO: 4	PKIVVVGVGGAGGNAVNNMIARGLQGVEFLVCNTDAQHLRTT..LTENRVQMAPELTGGL	
SEQ ID NO: 17	PKICVFGVGGGGCNAVNNMIARKLSGVEFVCANTDAQHLSTC..LTENKLQLGKESTQGL	
SEQ ID NO: 2	AS.....QLEGVEFIVANTDCQALGRS..LAPHKITLGKDITKGL	
Chloroplast FtsZ		
SEQ ID NO: 18	AKIKVVGVGGGGSNAVNRMIESAMKGVEFWIVNTDVQAIKMSPVYLENRLQIGQELTRGL	
SEQ ID NO: 19	AKIKVVGVGGGGSNAVNRMIESSMKGVEFWIVNTDIQAMRMSPVAAEQRLPIGQELTRGL	
SEQ ID NO: 20	ARIKVIGVGGGGSNAVNRMIESEMSGVEFWIVNTDIQAMRMSPVLPDNRLQIGKELTRGL	
SEQ ID NO: 21	AKIKVIGVGGGGSNAVNRMLESEMQGVEFWIVNTDAQAMALSPVPAQNRLQIGQKLTRGL	
SEQ ID NO: 22	AKIKVIGVGGGGSNAVNRMLESEMQGVEFWIVNTDAQAMALSPVPAQNRLQIGQKLTRGL	
SEQ ID NO: 23	CVIKVIGVGGGGGNAVNRMVG.GVEGVEFWSINTDAQALSRS..LAPNTCNIGAKLTRGL	
SEQ ID NO: 24	.....GVELWVVNTDAQALSRS..SAKRRLNIGKVLSRGL	
SEQ ID NO: 25	ANIKVIGVGGGGGNAVNRMIESDVSGVEFWSINTDAQALTLA..GAPSRLQIGQKLTRGL	
SEQ ID NO: 26	AKIKVIGVGGGGCNAVNRMIASGVTGIDFWAINTDSQALTNT..NAPDCIQIGQKLTRGL	
SEQ ID NO: 27	ARIKVIGVGGGGNNAVNRMISSGLQSVDFYAINTDSQALLQFSA..ENPLQIGELLTRGL	
SEQ ID NO: 28	AKIKVVGIGGGGNNAVNRMIGSGLQGVDFYAINTDAQALLHSAA..ENPIKIGELLTRGL	
SEQ ID NO: 29	AKIKVIGVGGGGNNAVNRMIGSGLQGVDFYAINTDAQALLQSAA..ENPLQIGELLTRGL	
SEQ ID NO: 30	AKIKVIGVGGGGNNAVNRMIGSGLQGVDFYAINTDAQALLQSAA..ENPLQIGELLTRGL	
SEQ ID NO: 31	AKIKVVGVGGGGNNAVNRMIGSGLQGVDFYAVNTDAQALLQSTV..ENPIQIGELLTRGL	
SEQ ID NO: 32	AKIKVVGVGGGGNNAVNRMIGSGLQGVDFYAVNTDAQALLQSTV..ENPIQIGELLTRGL	

FIG. 2

	60	110
Bacterial FtsZ		
SEQ ID NO: 11	GAGSQPEVGRAAAEECIDEIIDHLNGTHMCFVTAGMGGGTGTGAAPVVAQAARNKGILTV	
SEQ ID NO: 12	GAGSQPEVGRAAAEECIDEIIDHLQGTHMCFVTAGMGGGTGTGAAPIVAQAARNKGILTV	
SEQ ID NO: 13	GAGALPEVGRAAADECIDEIIDHLADSHMVFITAGMGGGTGTGAAPVVANAAREKGILTV	
SEQ ID NO: 14	GAGASPEVGALAAQESENEIRSSLENSNMVFITAGMGGGTGTGSAPIIARIAKELGILTV	
SEQ ID NO: 15	GAGAHPEVGMSAAEESFPEIGEHLDGAHMVFITAGMGGGTGTGAAPIIAKCARERGILTV	
Mitochondrial FtsZ		
SEQ ID NO: 16	GAGARPDIGRAAAEEAYETLKREFRGVHLLFVTAGMGGGTGTGAAPIIARAAAELGCLTV	
SEQ ID NO: 4	GCGANPEVGREAAEAAIDEILERVQGANMMFVTAGMGGGTGTGAAPVIAQAALDAGILTV	
SEQ ID NO: 17	GCGANPESGRRAAEESKEEIARYIADANMVFITAGMGGGTGTGAAPVVAEVCMEKDILTV	
SEQ ID NO: 2	GAGSKPELGKRSAEQQKVDIQRMLQDSNMLFITGGMGGGTCTGAAPVVASVARELGILTV	
Chloroplast FtsZ		
SEQ ID NO: 18	GAGGNPDIGMNAAKESKEAIEEAVYGADMVFVTAGMGGGTGTGGAPVIAGIAKSMGILTV	
SEQ ID NO: 19	GAGGNPDIGMNAANESKQAIEEAVYGADMVFVTAGMGGGTGTGAAPIIAGTAKSMGILTV	
SEQ ID NO: 20	GAGGNPEIGMNAARESKEVIEEALYGSDMVFVTAGMGGGTGTGAAPVIAGIAKAMGILTV	
SEQ ID NO: 21	GAGGNPEIGCSAAEESKAMVEEALRGADMVFVTAGMGGGTGSGAAPIIAGVAKQLGILTV	
SEQ ID NO: 22	GAGGNPEIGCSAAEESKAMVEEALRGADMVFVTAGMGGGTGSGAAPIIAGVAKQLGILTV	
SEQ ID NO: 23	GAGGNPEIGRKAAEESRDLIAEAVSAGDLVFVTAGMGGGTGSGAAPIVAEVAKEMGCLTV	
SEQ ID NO: 24	GAGGNPAIGAKAAEESREEIMAVVKNADLVFVTAGMGGGTGSGAAPVVAECAKEAGALTV	
SEQ ID NO: 25	GAGGNPAIGQKAAEESRDEIATALEGADLVFITAGMGGGTGTGAAPIVAEVAKEMGALTV	
SEQ ID NO: 26	GAGGNPAIGQKAAEESRDEIARSLEGTDLVFITAGMGGGTGTGAAPIVAEVAKEMGCLTV	
SEQ ID NO: 27	GTGGNPLLGEQAAEESKDAIANALKGSDLVFITAGMGGGTGSGAAPVVAQISKDAGYLTV	
SEQ ID NO: 28	GTGGNPLLGEQAAEESKEAIANALKGSDLVFITAGMGGGTGSGAAPVVAQISKEAGYLTV	
SEQ ID NO: 29	GTGGNPLLGEQAAEESKEAIANSLKGSDMVFITAGMGGGTGSGAAPVVAQIAKEAGYLTV	
SEQ ID NO: 30	GTGGNPLLGEQAAEESKEAIANSLKGSDMVFITAGMGGGTGSGAAPVVAQIAKEAGYLTV	
SEQ ID NO: 31	GTGGNPLLGEQAAEESKEHIANALKGSDMVFITAGMGGGTGSGAAPVVAQIAKEAGYLTV	
SEQ ID NO: 32	GTGGNPLLGEQAAEESKEHIANALKGSDMVFITAGMGGGTGSGAAPVVAQIAKEAGYLTV	

	120	170
Bacterial FtsZ		
SEQ ID NO: 11	GVVTKPFHFEGGRRMRLAEQGIEELQKSVDTLIVIPNQNLFRIANDKTTFADAFAMADQV	
SEQ ID NO: 12	GVVTKPFHFEGGRRMRIADQGISDLQKSVDTLIVIPNQNLFRIANDKTTFADAFAMADQV	
SEQ ID NO: 13	GVVTKPFQFEGARRMKTAEAGIEELQKSVDTLIVIPNQNLFRIANEKTTFSDAFAMADQV	
SEQ ID NO: 14	GVVTKPFHFEGGHRMKTADKGLIELQQFVDTLIVIPNQNLFRIANEQTTFADAFKMADDV	
SEQ ID NO: 15	GVVTKPFHFEGRHRMRLADSGIQELQRYVDTLIVIPNQNLFRVANERTTFAEAFGMADQV	
Mitochondrial FtsZ		
SEQ ID NO: 16	AVVTKPFHFEGMIRMKTAEQGIVELTEHVDTMLVIPNQNLFKVASPRTSFLDAFRLADHV	
SEQ ID NO: 4	AVVTKPFRFEGNNRAKLAAQGLAELKDSVDTMLVIPNQNLFNMSNERTSLMDAFRMADNV	
SEQ ID NO: 17	AVVTKPFSFEGKHRARLANEGIRSLEDRVDTLIIIPNQNIFKLINASTSMADAFGLADDI	
SEQ ID NO: 2	GVVSTPFRSEGPNRTRLANAGVKELAKYVDTLIVVPNQNLLALADKSTTMLEAFRYADDV	
Chloroplast FtsZ		
SEQ ID NO: 18	GIVTTPFSFEGRRRAVQAQEGIAALRDNVDTLIVIPNDKLLTAVSPSTPVTEAFNLADDI	
SEQ ID NO: 19	GIVTTPFSFEGRRRAVQAQEGIAALRENVDTLIVIPNDKLLTAVSPSTPVTEAFNLADDI	
SEQ ID NO: 20	GIATTPFSFEGRRRTVQAQEGLASLRDNVDTLIVIPNDKLLTAVSQSTPVTEAFNLADDI	
SEQ ID NO: 21	GIVTTPFAFEGRRRAVQAHEGIAALKNNVDTLITIPNNKLLTAVAQSTPVTEAFNLADDI	
SEQ ID NO: 22	GIVTTPFAFEGRRRSVQAHEGIAALKNNVDTLITIPNNKLLTAVAQSTPVTEAFNLADDI	
SEQ ID NO: 23	GVVTKPFAFEGKRRMQQANDAILNLRNKVDTLIVVSNDKLLQIVPDNTPLQDAFSVADDI	
SEQ ID NO: 24	GVVTKPFGFEGRKRMQQARNAILEMKDKVDTLIVVSNDKLLKIVPDNTPLTEAFLVADDI	
SEQ ID NO: 25	GVVTRPFVFEGRRRTSQAEQGIEGLKSRVDTLIIIPNNKLLEVIPEQTPVQEAFRYADDV	
SEQ ID NO: 26	GIVTRPFTFEGRRRAKQAEEGINALQSRVDTLIVIPNNQLLSVIPAETPLQEAFRVADDI	
SEQ ID NO: 27	GVVTYPFSFEGRKRSLQALEAIEKLQKNVDTLIVIPNDRLLDIADEQTPLQDAFLLADDV	
SEQ ID NO: 28	GVVTYPFSFEGRKRSLQALEAIEKLQKNVDTLIVIPNDRLLDIADEQMPLQDAFRLADDV	
SEQ ID NO: 29	GVVTYPFSFEGRKRSVQALEAIEKLQKNVDTLIVIPNDRLLDIADEQTPLQDAFLLADDV	
SEQ ID NO: 30	GVVTYPFSFEGRKRSVQALEAIEKLQKNVDTLIVIPNDRLLDIADEQTPLQDAFLLADDV	
SEQ ID NO: 31	GVVTYPFSFEGRKRSLQALEAIEKLQKNVDTLIVIPNDRLLDIADEQTPLQNAFLLADDV	
SEQ ID NO: 32	GVVTYPFSFEGRKRSLQALEAIEKLQKNVDTLIVIPNDRLLDIADEQTPLQNAFLLADDV	

FIG. 2

```
Bacterial FtsZ      180                                                   230
SEQ ID NO: 11       LYSGVACITDLMVKEGLINLDFADVRSVMREMARPMMGTGE....ASGPARAMQAAEAAI
SEQ ID NO: 12       LYSGVACITDLMVKEGLINLDFADVRSVMREMGRAMMGTGE....ASGEGRAMAAAEAAI
SEQ ID NO: 13       LYSGVASITDLMIKEGLINLDFADVRSVMHEMGRAMMGTGE....ASGDGRALAAAEAAI
SEQ ID NO: 14       LHAGVRGVTDLMIMPGLINLDFADIKAVMSEMGKAMMGTGE....DSGEDRAIKAAESAI
SEQ ID NO: 15       LHSGVRSITDLMVLPGLINLDFADVRTVMTEMGKAMMGTGE....GTAEDRALMAAQNAI
Mitochondrial FtsZ
SEQ ID NO: 16       LYSGVRSITDLMTVPGLINLDFADVRSVVREMGRAMMGSGEVEMEAGNEERAIRASEAAI
SEQ ID NO:  4       LLDGVKNISDLMVMPGLINLDFADVQSVMQNMGNAMMGSGEAD....GENRALRAAEDAL
SEQ ID NO: 17       LLAGVKSITDLMVRPGLINLDFADVRTVMSGMGHAIMGTGQAE....GEDRAIRAANDAL
SEQ ID NO:  2       LLEGVKGVTDLIVRPGLINL........................................
Chloroplast FtsZ
SEQ ID NO: 18       LRQGVRGISDIITIPGLVNVDFADVRAIMANAGSSLMGIGT....ATGKTRARDAALNAI
SEQ ID NO: 19       LRQGVRGISDIITIPGLVNVDFADVRAIMANAGSSLMGIGT....ATGKTRARDAALNAI
SEQ ID NO: 20       LRQGVRGISDIITIPGLVNVDFADVRAIMANAGSSLMGIGT....ATGKSRARDAALNAI
SEQ ID NO: 21       LRQGVRGISDIITVPGLVNVDFADVRAIMANAGSSLMGIGT....ATGKSRAREAALSAI
SEQ ID NO: 22       LRQGVRGISDIITVPGLVNVDFADVRAIMANAGSSLMGIGT....ATGKSKAREAALSAI
SEQ ID NO: 23       LRQGVVGISEIIVRPGLINVDFADVRSVMADAGSALMGIGT....GSGKTRAQDAAVAAI
SEQ ID NO: 24       LRQGVVGITEIIVKPGLVNVDFADVRTIMGNAGTALMGIGH....GKGKNRAKDAALSAI
SEQ ID NO: 25       LRQGVQGISDIITIPGLVNVDFADVRAVMADAGSALMGIGV....SSGKSRAREAAIAAI
SEQ ID NO: 26       LRQGVQGISDIIIIPGLVNVDFADVRAVMADAGSALMGIGV....GSGKSRAKEAATAAI
SEQ ID NO: 27       LRQGVQGISDIITIPGLVNVDFADVKAVMKDSGTAMLGVGV....SSSKNRAEEAAEQAT
SEQ ID NO: 28       LRQGVQGISDIITIPGLVNVDFADVKAVMKDSGTAMLGVGV....SSGKNRAEEAAEQAT
SEQ ID NO: 29       LRQGVQGISDIITIPGLVNVDFADVKAVMKDSGTAMLGVGV....SSSKNRAEEAAEQAT
SEQ ID NO: 30       LRQGVQGISDIITIPGLVNVDFADVKAVMKDSGTAMLGVGV....SSSKNRAEEAAEQAT
SEQ ID NO: 31       LCQGVQGISDIITIPGLVNVDFADVKAIMKDSGTAMLGVGV....SSSRNRAEEAAEQAT
SEQ ID NO: 32       LCQGVQGISDIITIPGLVNVDFADVKAIMKDSGTAMLGVGV....SSSRNRAEEAAEQAT

Bacterial FtsZ      240                                                   290
SEQ ID NO: 11       ANPLLD.ETSMKGAQGLLISITGGRDLTLFEVDEAATRIREEVDP.DANIILGATFDEAL
SEQ ID NO: 12       ANPLLD.ETSMKGAQGLLISITGGRDLTLFEVDEAATRIREEVDP.DANIILGATFDEEL
SEQ ID NO: 13       ANPLLD.DTSMRGARGLLISITGGRDMTLFEVDEAANRIREEVDA.DANVIFGAIDDESL
SEQ ID NO: 14       SNPLLD.HSSMCGARGVLINITGGPDMTLFEVDNAANRIREEVDNIDANIIFGSTFNPEL
SEQ ID NO: 15       ANPLLD.EVSLKGAKAVLVNVTGGMDMTLLEVDEAANAISDQVDP.EANIIFGAAFDPSL
Mitochondrial FtsZ
SEQ ID NO: 16       CNPLLD.ETSLRGARGVLVNITGGTDMTLFEIDAAANRIREQVDP.DANIIFGSAFDASM
SEQ ID NO:  4       ANPLLG.DISIKDAKGMIVNITGGSDLTLFEVDEAAERVTRELDDPHANIIFGSTFDDSL
SEQ ID NO: 17       NNPLLGGDFSVRSAKGMLVNITGGKDLTLVEVDAAAQRITSEIEDEDANVIFGSSFDESL
SEQ ID NO:  2       ............................................................
Chloroplast FtsZ
SEQ ID NO: 18       QSPLLD..IGIERATGIVWNITGGSDLTLFEVNAAAEVIYDLVDP.SANLIFGAVVDPSL
SEQ ID NO: 19       QSPLLD..IGIERATGIVWNITGGSDLTLFEVNAAAEVIYDLVDP.SANLIFGAVIDPSI
SEQ ID NO: 20       QSPLLD..IGIERATGIVWNITGGSDLTLFEVNAAAEVIYDLVDP.TANLIFGAVVDPAL
SEQ ID NO: 21       QSPLLD..VGIERATGIVWNITGGSDMTLFEVNAAAEVIYDLVDP.NANLIFGAVVDEAL
SEQ ID NO: 22       QSPLLD..VGIERATGIVWNITGGSDMTLFEVNAAAEVIYDLVDP.NANLIFGAVVDEAL
SEQ ID NO: 23       SSPLLD..FPIEKARGIVFNITGGQDMTLHEINSAAEVIYEAVDS.NANIIFGALVDDNM
SEQ ID NO: 24       SSPLLD..FPITRAKGIVFNIVGGSDMSLQEINAAAEVIYENVDQ.DANIIFGAMVDDKM
SEQ ID NO: 25       SSPLLE..CSIEGARGVVFNITGGSDLTLHEVNAAAETIYEVVDP.NANIIFGAVIDDRL
SEQ ID NO: 26       SSPLLE..SSIQGAKGVVFNVTGGTDLTLHEVNVAAEIIYEVVDA.DANIIFGAVIDDRL
SEQ ID NO: 27       LAPLIG..SSIQSATGVVYNITGGKDITLQEVNRVSQVVTSLADP.SANIIFGAVVDDRY
SEQ ID NO: 28       LAPLIG..SSIQSATGVVYNITGGKDITLQEVNRVSQVVTSLADP.SANIIFGAVVDDRY
SEQ ID NO: 29       LAPLIG..SSIQSATGVVYNITGGKDITLQEVNRVSQVVTSLADP.SANIIFGAVVDERY
SEQ ID NO: 30       LAPLIG..SSIQSATGVVYNITGGKDITLQEVNRVSQVVTSLADP.SANIIFGAVVDERY
SEQ ID NO: 31       LAPLIG..LSIQSATGVVYNITGGKDITLQEVNKVSQVVTSLADP.SANIIFGAVVDERY
SEQ ID NO: 32       LAPLIG..SSIQSATGDVYNITGGKDITLQEVNKVSQVVTSLADP.SANIIFGAVVDERY
```

FIG. 2

	300
Bacterial FtsZ	
SEQ ID NO: 11	E.GLIRVSVVATGI
SEQ ID NO: 12	E.GLIRVSVVATGI
SEQ ID NO: 13	E.GVIRVSVVATGI
SEQ ID NO: 14	K.GIIRVSVVATGI
SEQ ID NO: 15	E.GVIRVSVVATGM
Mitochondrial FtsZ	
SEQ ID NO: 16	Q.GRLRVSVLATGI
SEQ ID NO: 4	G.GKLRVSVVATGI
SEQ ID NO: 17	Q.GSIRVSIVATGI
SEQ ID NO: 2	.....
Chloroplast FtsZ	
SEQ ID NO: 18	C.GQVSITLIATGF
SEQ ID NO: 19	S.GQVSITLIATGF
SEQ ID NO: 20	S.GQVSITLIATGF
SEQ ID NO: 21	H.GQVSITLIATGF
SEQ ID NO: 22	H.DQISITLIATGF
SEQ ID NO: 23	EN.EISITVVATGF
SEQ ID NO: 24	TSGEVSITVLATGF
SEQ ID NO: 25	Q.GEVRITVIATGF
SEQ ID NO: 26	Q.GEMRITVIATGF
SEQ ID NO: 27	.TGEIHVTIIATGF
SEQ ID NO: 28	.TGEIHVTIIATGF
SEQ ID NO: 29	.NGEIHVTIIATGF
SEQ ID NO: 30	.NGEIHVTIIATGF
SEQ ID NO: 31	.NGEIQVTLIATGF
SEQ ID NO: 32	.NGEIQVTLIATGF

FIG. 2

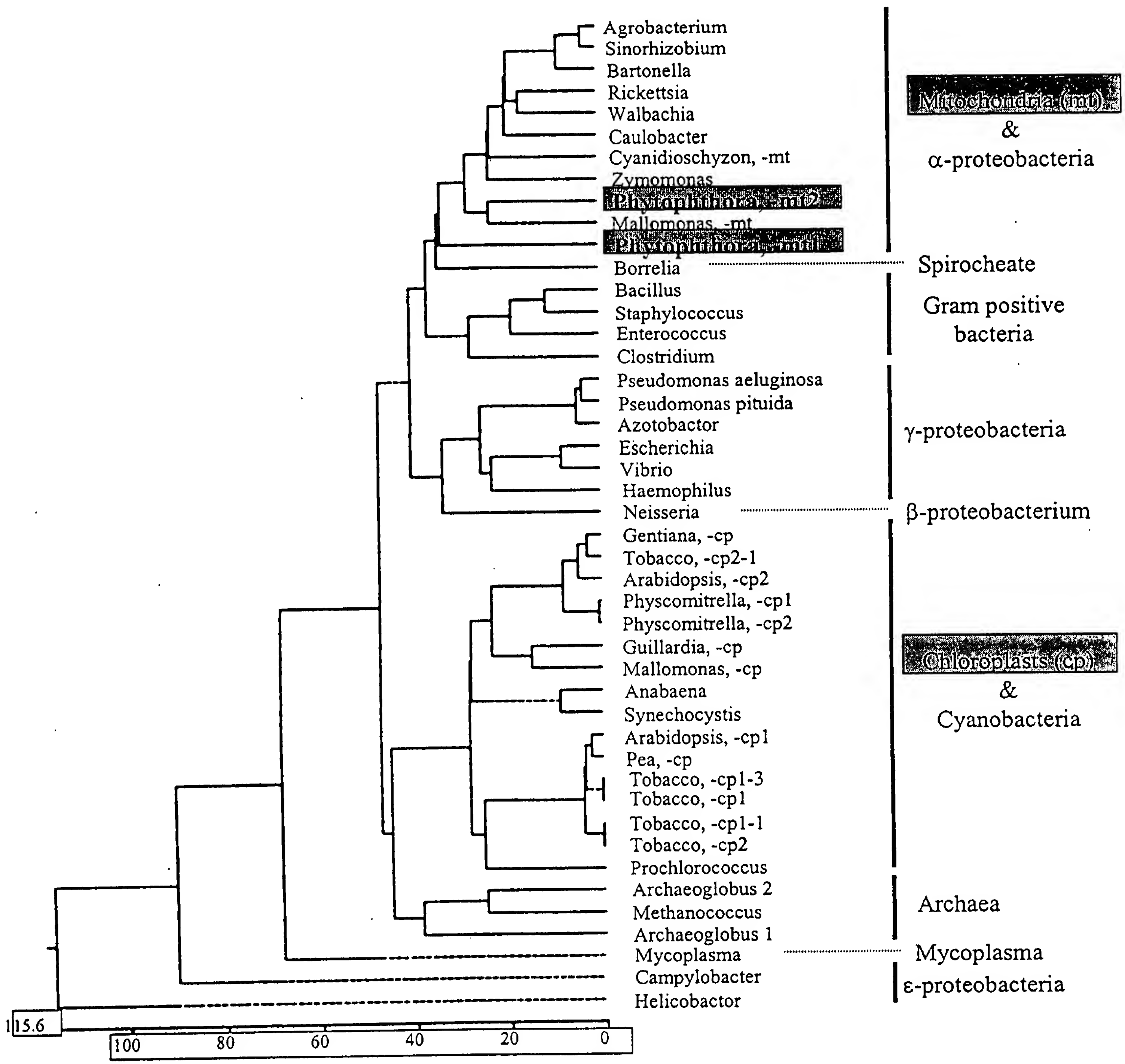

Agrobacterium
Sinorhizobium
Bartonella
Rickettsia
Walbachia
Caulobacter
Cyanidioschyzon, -mt
Zymomonas
Phytophthora, -mt2
Mallomonas, -mt
Phytophthora, -mt1
Borrelia
Bacillus
Staphylococcus
Enterococcus
Clostridium
Pseudomonas aeluginosa
Pseudomonas pituida
Azotobacter
Escherichia
Vibrio
Haemophilus
Neisseria
Gentiana, -cp
Tobacco, -cp2-1
Arabidopsis, -cp2
Physcomitrella, -cp1
Physcomitrella, -cp2
Guillardia, -cp
Mallomonas, -cp
Anabaena
Synechocystis
Arabidopsis, -cp1
Pea, -cp
Tobacco, -cp1-3
Tobacco, -cp1
Tobacco, -cp1-1
Tobacco, -cp2
Prochlorococcus
Archaeoglobus 2
Methanococcus
Archaeoglobus 1
Mycoplasma
Campylobacter
Helicobactor
Mitochondria (mt)
&
α-proteobacteria
Spirocheate
Gram positive
bacteria
γ-proteobacteria
β-proteobacterium
Chloroplasts (cp)
&
Cyanobacteria
Archaea
Mycoplasma
ε-proteobacteria
115.6
100
80
60
40
20
0

FIG. 3